

# UPDATE:

## The Tryptophan Controversy

**O**n November 17, 1989, the Food and Drug Administration ordered the amino acid tryptophan removed from the marketplace. Though millions used tryptophan supplements for over 30 years, no significant side effects were noted until 1988. At that time cases of a rare condition known as Eosinophilia-Myalgia Syndrome (EMS) appeared and were traced to what was later found to be contaminated tryptophan.

In 1988 Show A Denko, a Japanese petrochemical firm, changed their filtration procedure in the manufacturing of tryptophan. This change produced contaminated tryptophan which was sold to a number of amino acid distributors who unknowingly used it in their products. Certain predisposed individuals experienced a massive toxic/allergy response to the contaminant, and the FDA's response was to ban tryptophan completely. Unlike the case where Perrier was contaminated by benzene, the Tylenol tampering cases, salmonella in milk and eggs, or other temporary and identified contamination incidents, the FDA has not rescinded the ban on tryptophan—even though it is known that temporary contamination is what caused the cases of EMS.

Numerous studies done on the issue of tryptophan vs. contaminant causation of EMS show that the cases of EMS were caused by the temporary contamination of tryptophan. For reasons of space and complexity I will only mention a few of the most recent ones.

In 1991, Tyson and Associates funded a research project through the North Dakota School of Medicine in which rats were fed USP tryptophan at a dosage equivalent to 17,500 mg for a 150 lb. person. There was no evidence of any induced inflammatory process or increased eosinophil counts which signify EMS. There were no harmful effects on their livers, or any other organs.

Another animal study on tryptophan, published in *The Journal of Clinical Investigation, Inc.*, Vol. 86, November 1990, 1757-1763, used three groups of rats. One group was given the contaminated tryptophan while another group was given pure pharmaceutical-grade tryptophan, both at dosages comparable to those used by the patients who had developed EMS. There was also a control group. The rats who received the contaminated tryptophan developed many signs consistent with the features of EMS in humans. The control group and those receiving pharmaceutical-grade tryptophan showed no such signs.

The results of a study done by Dr. Christopher Caston in South Carolina were published in the journal *Advances in Therapy* July/August 1990, 7(4): 206-288. Dr. Caston used tryptophan manufactured by Tyson and Associates to treat 20 EMS patients who were unresponsive to steroid therapy. All of them responded to his treatment approach.

These studies should have settled the issue, but the battle rages on. Many believe the continued ban on tryptophan is political. The FDA is considering making *all* amino acids available only with a doctor's

prescription, or removing them from the market completely. Making them available by prescription only will necessitate doctors' office visits and increase the price considerably. Amino acids are components of proteins. If the FDA succeeds with this then it might as well systematically banish each nutrient supplement and legislate the American diet!! If tryptophan is dangerous, then why not ban milk, turkey, and other foods with *naturally* high amounts of tryptophan? I myself have never seen any side effects other than those discussed in Chapter 4, because I've used pure pharmaceutical-grade tryptophan with my patients.

As explained in Chapter 5, tryptophan helps the body to make more serotonin. Normal metabolic processes regulate serotonin production and prevent the body from making too much. Contrast this to the powerful new and controversial drugs approved and defended by the FDA, such as Prozac, which increases the brain's serotonin levels and can override the natural metabolic process which would stop overaccumulation of serotonin. Such drugs can sometimes cause an abnormal excess of serotonin and may have significant debilitating side effects.

Many have found it too coincidental that these drugs were receiving heavy promotion and FDA approval and support at the same time that tryptophan—a far safer substance—was taken off the market. Certainly the continuing availability of tryptophan would have cut into the market share of these drugs. It is also important to note that pharmaceutical-grade tryptophan continues to be available abroad.

Of course there should be quality control of these supplements. But the misplaced emphasis and policing that has occurred with regards to tryptophan seems motivated more by politics than governmental

concern for public health and safety. We must speak up to protect our rights to natural health care. If there is enough public pressure on elected officials and government agencies, there will be a change in policy-making like that surrounding the continued ban on tryptophan.

## TRYPTOPHAN ALTERNATIVES

After tryptophan was removed from the market, numerous people called me to ask what they could use instead. As discussed in Chapter 5, a substitute is often unnecessary because the supplementation of Pyridoxal-5-phosphate will enable optimal production of serotonin from tryptophan taken naturally as part of your diet.

### Magnesium

If an individual wants tryptophan primarily for its sleep-enhancing or calming, rather than anti-depressant effects, there are several other nutrients which can accomplish this. Since *The Way Up From Down* was first published five years ago, I have prescribed more magnesium than I ever did before, and I've been amazed at the number of people needing and responding to its supplementation.

This should not be surprising since recent surveys have suggested that as many as 40 percent of the U.S. population may be deficient in magnesium. Since more than 300 enzymes are known to be activated by magnesium, deficiency can affect numerous bodily functions and be related to illnesses such as depression, mania, attention deficit disorder, premenstrual

syndrome, asthma, diabetes, and heart irregularities, just to mention a few.

Magnesium is excellent for promoting calm and relaxation. However it also acts as a laxative, so diarrhea can limit the dosage. Magnesium citrates, taurates, aspartates and orotates are the most readily absorbable oral forms.

You may start with 100 mg daily and gradually increase the dosage until you reach the desired relaxation effect, or until you are limited by diarrhea. Magnesium can be taken with or without food. Generally, for anxiety, I prescribe 100–400 mg twice daily, and at bedtime. For insomnia 100–400 mg with dinner and at bedtime. For a more immediate effect, the contents of one or two capsules can be placed under your tongue.

Magnesium is also useful for helping to control hypomania and mania. Many of my manic depressive patients do very well on substantial doses of magnesium—up to 3,000 mg daily.

There is additional discussion of magnesium in Chapter 7 and a comprehensive chart about magnesium in the Appendix.

## **Taurine**

Taurine is the most abundant amino acid in the central nervous system. It functions as a neuroinhibitor and is itself a neurotransmitter. It stabilizes the nerve membranes and thus acts to calm the central nervous system. I prescribe 500 to 1,000 mg two to three times daily, with or without food, for those with anxiety or agitation. If insomnia is predominant, the taurine is given in a dosage of 500 to 1,500 mg with dinner and at bedtime. Sometimes I prescribe doses as high as 5,000 mg daily for those who have shown

very low taurine blood levels. I often see low taurine in those who are genetically prone to depression, those with Parkinson's Disease, anxiety, hyperactivity, heart disease, and gastrointestinal disturbances. Taurine also supports heart function, stimulates the immune system, aids in fat metabolism, and helps to control seizures.

## **Glycine**

This amino acid is one of the main inhibitory neurotransmitters and therefore is calming. It is useful during the day when there is anxiety or agitation. Take 500 mg one to three times daily. When used at bedtime for insomnia, it is often beneficial to open one or two 500 mg capsules of glycine together with one 500 mg capsule of gaba in a cup of warm, sleep-inducing tea such as chamomile or a mixed tea such as Sleep Time Herb Tea. This method of administration insures more rapid absorption and increases the likelihood of a sleep-inducing effect.

## **Niacin and Niacinimide**

These two forms of B<sub>3</sub> can be calming, but in occasional cases can increase the feeling of depression. A more complete discussion is found in Chapter 7.